

THOROUGHFARE AMENDMENT STUDY
UNINCORPORATED & NON-ETJ AREAS
HARRIS COUNTY, TEXAS

Prepared for



Prepared by



December 29, 2014

THOROUGHFARE AMENDMENT STUDY

for UNINCORPORATED & NON-ETJ AREAS in HARRIS COUNTY, TEXAS

In and around the area of Barrett Station, south of Crosby

UPIN No. 15102MF0BJ01

Study Prepared for:

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Study Overview

The purpose of this study is to serve as a guide for comprehensive thoroughfare alignment and right-of-way (ROW) width planning efforts in an unincorporated area of Harris County, Texas. This study will be a source for coordination among jurisdictions that share the responsibility for developing and maintaining an effective transportation system within and adjacent to the study area. This includes the proposed classification of existing, future, and neighboring thoroughfares. All recommendations and assumptions in this study have carefully considered the extents of the following:

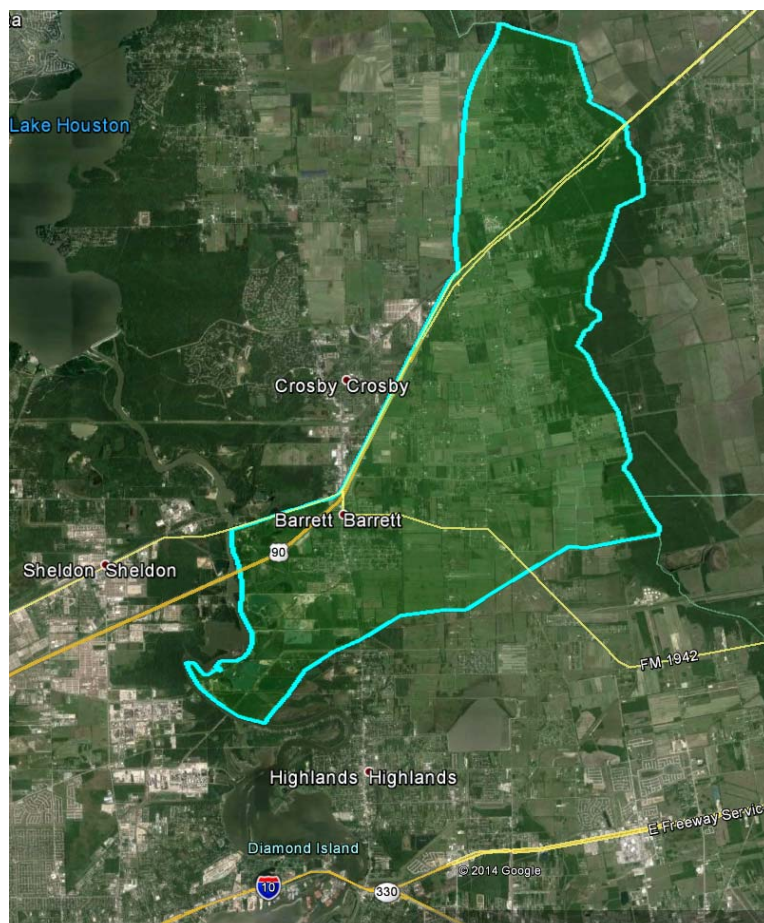
- Existing and future thoroughfare plans by the City of Houston, City of Baytown, as well as, Harris, Liberty, and Chambers counties.
- Existing and future land use in the area based on modeled statistics by H-GAC.
- Existing and future traffic needs based on traffic counts by H-GAC.
- Existing and future infrastructure improvements along US Hwy 90, IH-10, and Grand Parkway SH 99.
- Relevant platting and development activity

From the onset, it has been the desire of Harris County Precinct 2 to address and alleviate existing congestion through unincorporated Barrett and begin planning for future thoroughfares in the area. Recent development in Barrett and Crosby has seen an increase in average daily traffic volumes and the potential for future development to add to this problem is high due to the location of large acreage tracts which may be prime for development.

Alternate thoroughfare routings and additional thoroughfares would help to ease traffic issues, however since the study area is in unincorporated areas of Harris County, little attention has been paid to this problem until now.

The study area is located east of the City of Houston and north of the City of Baytown. The boundary of the study area is approximately defined by the western Chambers County line, the northern Baytown extraterritorial jurisdiction line, and the eastern Houston extraterritorial jurisdiction line. US Hwy 90 forms the west side of the study boundary and crosses through the northeastern region of the study area, as seen in Figure 1.

Figure 1: No ETJ Study Area



Most of the population within the study area constitutes the census designated places of Barrett, TX and Crosby, TX. The unincorporated town of Barrett primarily consists of residential and agricultural land use and is recognized as a historic settlement that began in 1889. Between the years 2000 - 2010, Barrett's population increased by about 11% to a total population of 3,199. The H-GAC (Houston-Galveston Area Council) area growth model predictions demonstrate there will be an increase in residential, commercial, and Government/Medical/Education land use within the Barrett, TX area by the year 2040. Generally, moderate growth is expected for Barrett and its surroundings.

The town of Crosby, TX is located north of US Hwy 90 and currently consists of residential, commercial, and agricultural land use. Between the years 2000 - 2010, Crosby's population increased by about 63% to a total population of 2,799. H-GAC has concluded with model predictions that by the year 2040, there will be an increase in residential, commercial, and Government/Medical/Education land uses. Generally, a considerable amount of growth is expected for Crosby and its surroundings. This growth is primarily due to its location near Lake Houston and its current abundance of developable land. Also, the recent US Hwy 90 improvements between Houston and Crosby have resulted in new travel lanes and improved intersections which contribute to easy highway access. However, several intersections remain at-grade and there are few roads which provide regional connectivity. Instead, the area is predominantly characterized by local roads.

The following text describes the observations, assumptions, and recommendations for future thoroughfares within and outside of the aforementioned study area.

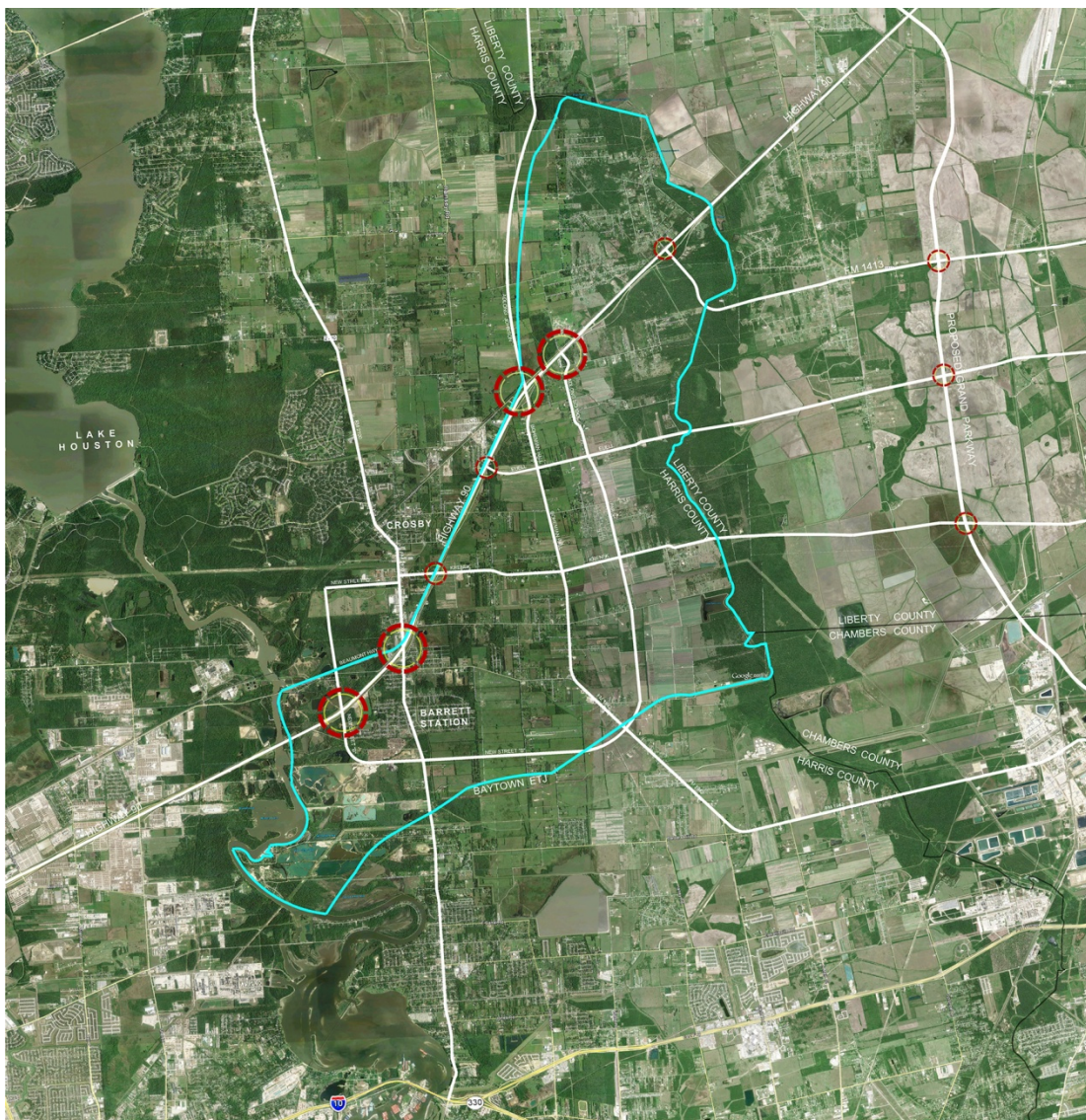
Basis of Study

The rationale for this study lies in several key factors:

- 1) FM 2100 through Barrett and Crosby has seen dramatic traffic increases, resulting in long delays during peak travel hours in the mornings and afternoons. The combination of few travel lanes, multiple traffic signals, retail development, and increased daily traffic volumes creates traffic issues at this location on either side of US Hwy 90.
- 2) The lack of jurisdiction by any local government has resulted in the area being unplanned with regard to future roads. Harris County Precinct 2 has the burden for road maintenance for most roads in the area, without any ability to plan for future ROW or lane expansions except for spot projects.
- 3) The proposed Grand Parkway will be located roughly three miles east of the study area and is projected to have a dramatic influence on future development in the area. Intersection planning for the Parkway is already underway by the Grand Parkway Association. East/west thoroughfare connectivity is non-existent at present and needs to be planned to minimize bridge connections over Cedar Bayou between Harris and Liberty Counties while maximizing the ability to connect to the future Grand Parkway.
- 4) A new High School is being planned on FM 2100 north of US Hwy 90 adjacent to the myriad of new commercial activity. The retail and school traffic generated by the number of businesses and traffic signals on FM 2100 is creating congestion, even on the newly widened portion in Crosby. The congestion backup through Barrett can be over a mile and a half long.

5) To address these issues, Harris County representatives from both the Public Infrastructure Department and Precinct 2 worked with EHRA Engineering to formulate the idea of a “bypass” or “loop” concept around Barrett which would distribute traffic around the currently congested areas while planning for future development within the study area and the surrounding areas within the Cities of Houston and Baytown, as well as Liberty County. Figure 2 illustrates the backbone thoroughfare alignments which will create greater circulation and future connectivity.

Figure 2: Conceptual Connectivity



Equation of Classifications

The street hierarchy classification used for this study was compiled by examining existing thoroughfare plans adjacent to the study area. The City of Baytown and the City of Houston both have existing and proposed thoroughfares that intersect and extend up to the study boundary. Therefore, these systems were necessary to take into consideration when connecting thoroughfares from the study area to the extraterritorial jurisdictions of Houston and Baytown.

When comparing street classifications between Houston and Baytown, the terminology differs despite similar levels of service. Due to significant differences in right-of-way widths and number of lanes for each jurisdiction, it is necessary to equate street classifications with a common hierarchy from both city thoroughfare plans. The summary table below demonstrates the varying ranges in right of way widths and number of lanes for Houston and Baytown.

City of Houston and City of Baytown Street Classifications

| City | Major Thoroughfare | Major Arterial | Minor Arterial | Major Collector | Minor Collector | Collector |
|----------------|-----------------------|-------------------------|-------------------------------|------------------------|----------------------|-------------------------------|
| Houston | 100' ROW (4 Lanes) | None | None | 80' ROW (2-4 Lanes) | 60' ROW (2 Lanes) | None |
| Baytown | None | 140' ROW (4-5 Lanes) | 116'-126' ROW (4 Lanes) | None | None | 72'-96' ROW (2-4 Lanes) |

The designation of a major thoroughfare in Houston approximately equates to the designation of a Major Arterial for Baytown. Similarly, the designation of a Major Collector in Houston is approximately equal to a Collector in Baytown. The comparison of major thoroughfare classifications is shown below.

Major Thoroughfare Classification

| City | Equal “ Major Thoroughfare” Classification | Right of Way Width | Number of Lanes |
|----------------|--|--------------------|-----------------|
| Houston | Major Thoroughfare | 100’ | 4 Lanes |
| Baytown | Major/Minor Arterials | 116’—140’ | 4-5 Lanes |

Since the City of Houston Major Thoroughfare and Freeway Plan serves as the predominant planning guide in most areas of unincorporated Harris County, it is appropriate that thoroughfares within the study area be defined using the City of Houston Classifications. When a major thoroughfare is located outside of the study area, it will be defined according to the appropriate jurisdiction, either Baytown or adjacent county. Proposed Major Thoroughfares within the study area will follow City of Houston street hierarchy standards. Several requests for reclassification of City of Houston major thoroughfares adjacent to the study boundary will need to be considered. The reclassification of current major thoroughfares would provide a consistent hierarchy for the overall area and will address current and future traffic needs more appropriately.

A common hierarchy for a Street designations below a major thoroughfare described as a major Collector, were necessary to define as well. The City of Houston major collector classification is the most equal to City of Baytown Collectors with regard to right of way width and number of lanes. Therefore, this study has defined them as being equal “major collectors” as shown in the table below.

Major Collector Classification

| City | Equal “Major Collector” Classification | Right of Way Width | Number of Lanes |
|---------|--|--------------------|-----------------|
| Houston | Major Collectors | 80’ | 2-4 Lanes |
| Baytown | Collectors | 72’-96’ | 2-4 Lanes |

Major Collectors in the study area will comply with the City of Houston standards for this designation and will align with City of Baytown Collector street locations.

Liberty County’s thoroughfare plan shows only thoroughfare alignments, without a system of hierarchy. Therefore, this study creates connectivity by matching alignments with the Liberty County plan. This was primarily achieved by coordinating intersection locations with the future Grand Parkway and minimizing the number of crossings over Cedar Bayou between Harris and Liberty Counties. Input from the Liberty County Commissioner’s office and the Grand Parkway Association assisted in choosing appropriate alignments.

Reasons for Connectivity

The thoroughfares to be classified, deleted, and reclassified were examined based on their connections across jurisdictions, major highways, and existing intersections. US Hwy 90/Beaumont Hwy passes through the southwestern side of the study area up to the northeastern boundary.

Figure 3: Above grade intersection at Hwy 90/Beaumont Hwy. facing north



US Hwy 90 currently has 10 intersections within the study area, with 4 being grade separated interchanges. In the southernmost portion of the study area, there is an existing grade separated interchange on US Hwy 90. This interchange, as seen above in Figure 3, does have a crossroad. As currently configured, this interchange is little more than a U-turn. If extended to the north and south, this road could potentially create an alternate route to US Hwy 90 while reducing traffic on existing FM 2100. Therefore, this study proposes to extend

“New Street ‘B’” to the north and south in order to create two future connections back to FM 2100. Ultimately, this road would form an alternate route from the future Crosby High School site around the existing FM 2100/US Hwy 90 interchange and would utilize currently unused existing infrastructure.

Several issues are present at this current interchange. On the south side, the existing service road does not lead to a connecting street. This service road can be seen below in Figure 4 and has only a barricade on its west end.

Figure 4: Hwy 90 Service road currently unused



Just north of this intersection the topography drops significantly in elevation. Complicating matters further, there has been recent dirt moving which appears to be a drainage project of some kind as shown in Figure 5. The designated alignment north from the existing interchange would require the construction of a bridge in order to avoid probable flood plain areas.

Figure 5: Drainage project on north side of intersection at Hwy 90



The list of proposed classifications has considered the necessity for specific thoroughfares in Houston and Baytown to provide connections to the major highways through the study area. These major highways include, US Hwy 90, the future SH 99/Grand Parkway route, and connections to IH-10 to the south. Therefore, it is proposed to classify FM 2100 as a major thoroughfare since it currently routes from US Hwy 90 south to IH-10. Through Barrett, FM 2100 has many local businesses and residential cross-streets but is only two lanes wide. In addition, FM 2100 is a major intersection at US Hwy 90 where there is currently a grade separated interchange. North of Barrett in Crosby, there is significant recent commercial development and an expanded number of travel lanes, including a center turn lane. A view of this area can be seen in the Figure 6.

Figure 6: FM 2100 north of US Hwy 90 facing south



The unincorporated area of study is bordered by the City of Houston ETJ, the City of Baytown ETJ, and Liberty County. Many existing thoroughfares in these jurisdictions do not efficiently connect through the study area. In fact, many currently planned streets in the outer jurisdictions cease their alignments at the boundary of the study area. For this reason, it is proposed to extend and realign streets in order to continue the ability for traffic to flow east and west, while considering the existing the Houston and Baytown thoroughfare plans.

The list of proposed extensions (beginning on page 17) considers the necessity for thoroughfares in Baytown and Houston to provide routes to the major highways within and near the study area. These major highways include, US Hwy 90, the future SH 99 Grand Parkway route, and major road connections to IH-10. It is designated that Bohemian Hall and FM 1942 become major thoroughfares and provide direct access to Hwy 90. In addition, it is designated for Miller Wilson Rd. to be a Major Thoroughfare that continues south, providing a route to IH-

10. The future extension of the SH 99/Grand parkway will be a major regional north/south transportation spine. There is an opportunity for streets such as Krenek Rd, Euell Rd, and FM 1942 to continue from the western side of the study area boundary and to be designated as major thoroughfares. Along with the construction of the SH 99/Grand Parkway, future neighborhoods and commercial areas are likely develop in the area. Therefore the extension and classification other of east/west collector roads is necessary. These thoroughfares have been designated to support traffic routes to major highways and existing City of Houston Major Thoroughfares as well as providing future neighborhood connectivity.

Also within the study area, there are several intersections where existing streets do not line up across from each other. This creates multi-turn intersections in order to continue traveling in the same direction, thus creating traffic issues. The removal of multi-turn intersections has been proposed at designated major thoroughfares such as FM 2100, Euell Rd., and Krenek Rd., among others. Removing these intersections will improve traffic flow by reducing or eliminating the number of vehicle stops. In addition to removing multi-turn intersections on Major Thoroughfares, it is proposed to remove multi turn intersections at major collector designations to improve traffic flow along streets such as Crosby Eastgate Rd, Seaberg Rd, and Runneburg Dr.

The following map is a composite of all proposed thoroughfare additions and changes within both the study area and surrounding jurisdictions. Refer to the legend in the upper left corner for the various jurisdiction colors and road classifications.

LEGEND

HARRIS COUNTY/CITY OF HOUSTON

MAJOR THOROUGHFARES

LIBERTY COUNTY THOROUGHFARES

BAYTOWN MAJOR ARTERIAL

BAYTOWN MINOR ARTERIAL

BAYTOWN COLLECTOR

GRAND PARKWAY ALIGNMENT

CITY OF HOUSTON FREEWAY

ALIGNMENT TO BE REMOVED

EXISTING GRADE SEPARATED INTERCHANGE

EXISTING AT GRADE 3-WAY INT

EXISTING AT GRADE 4-WAY INT

FUTURE GRAND PARKWAY GRADE SEPARATED INTERCHANGE

MAJOR THOROUGHFARES

EXISTING

TO BE ACQUIRED

MAJOR COLLECTORS

EXISTING

TO BE ACQUIRED

MINOR COLLECTORS

EXISTING

TO BE ACQUIRED

An aerial map of a region in Harris and Liberty Counties, Texas, showing a thoroughfare study area. The map is overlaid with various colored lines representing different types of roads and infrastructure. A legend in the top-left corner defines these symbols: red lines for Harris County/City of Houston major thoroughfares, yellow for Liberty County thoroughfares, blue for Baytown major arterials, green for Baytown minor arterials, orange for Baytown collectors, purple for Grand Parkway alignment, and black for City of Houston freeways. It also includes symbols for alignments to be removed, existing grade-separated interchanges, existing at-grade 3-way and 4-way intersections, and future Grand Parkway grade-separated interchanges. The map shows Lake Houston on the left, with several roads crossing it. Major roads like FM 1413 and FM 1960 are visible. The study area is outlined in black and includes locations like Crosby, Barrett Station, and Baytown. Surrounding areas are labeled as Liberty County, Harris County, and Chambers County. Highway shields for 90, 10, and 330 are present.

Thoroughfare Study - Area View

Harris County Public Infrastructure Department

EHRA JOB NO. 141-049-00
P:\141-049-00\Landplan\MTFP 123014 MOST CURRENT MAP.dwg Dec 30, 2014-10:28am Edited by: ealvarado

December 30, 2014

0

1.5 mi.

3 mi.

SCALE: 1"=1.5 mi.

NORTH

No warranty or representation of intended use, design or proposed improvements are made herein. All Plans for land or facilities are subject to change without notice.

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TBPE No. F-726

Proposed Thoroughfares

Classifying

Thoroughfares within the study boundary belong under the Classifying list of thoroughfares. The following streets have not previously been classified as part of a hierarchy in any jurisdiction and are recommended to be classified as below.

1. Classify Crosby Eastgate Rd. between Lord Rd. and Louis Rd. as a collector
2. Classify Lord Rd. between Adlong Johnson Rd. and Hwy 90/Beaumont Hwy as a collector
3. Classify Euell Rd. between Hwy 90/Beaumont Hwy and Liberty county line as a major thoroughfare
4. Classify Runneburg Dr. between 1st St and Dustin Ln. as a collector
5. Classify Krenek Rd. between FM 2100 and the Harris/Liberty county line as a major thoroughfare.
6. Classify Kenning Rd. between Hwy 90/Beaumont Hwy and the Harris/Liberty county line as a collector.
7. Classify FM 1942 between FM 2100 and the Baytown ETJ line as a major thoroughfare.
8. Classify New Street "B" between FM 2100 South and FM 1942 as a collector.
9. Classify New Street "D" between Via Dora dr. and FM 2100 as a major thoroughfare.
10. Classify New Street "E" between Via Dora dr. and FM 2100 as a major thoroughfare.
11. Classify Bohemian Hall Rd. between Hwy 90/Beaumont Hwy. and FM 1942 as a major thoroughfare.
12. Classify Lindstrom Rd. between Euell Rd. and Kenning Rd. as a collector.
13. Classify FM 2100 between Hwy 90/Beaumont Hwy and the Baytown ETJ line as a major thoroughfare.
14. Classify Eagleton Ln. between Kenning and New Street " B" as a collector.
15. Classify Sralla Rd. between Kenning Rd. and Baytown ETJ line as a collector.
16. Classify Seaberg between Wolcek Rd. and FM 1942 as a collector.
17. Classify Holy Rd. between the Baytown ETJ line and Seaberg Rd as a collector.
18. Classify Dustin Rd. between Euell Rd. and Holy Rd. as a collector
19. Classify Crosby Eastgate between Lord Rd. and Hwy 90/Beaumont Hwy as a collector.
20. Classify Adlong School Rd. between Hwy 90/Beaumont Hwy and Euell Rd. as a collector.

Deleting

Some thoroughfares immediately adjacent to the study boundary located outside of the study area are recommended to be removed. These thoroughfares are located within the City of Houston and are within the City of Houston Major Thoroughfare Plan. These thoroughfares do not currently serve as high traffic routes. Some of these thoroughfares are defined as “to be acquired” by the city. We recommend removing the following to avoid unnecessary expansion and duplicates of these routes.

1. Miller Road No. 3 between Hwy 90/Beaumont Hwy to Sheldon Rd.
2. Unnamed street between Lake Houston Pkwy. and FM 2100/Crosby Lynchburg
3. Unnamed street between Beaumont Hwy and unnamed street south of Via Dora Dr.
4. Unnamed street between Miller Wilson Rd. and Wolf Trot Rd.
5. Foley Rd. between Miller Wilson and Houston ETJ line.
6. Wolf Trot between future E Lake Houston pkwy. and the Houston ETJ line.
7. Unnamed road in Liberty County which mimics Grand Parkway.

Reclassifying

Streets designated to be reclassified are located outside of the study area. These thoroughfares are located within the City of Houston Major Thoroughfare Plan or the City of Baytown Mobility Plan. These thoroughfares are recommended to be reclassified to more specifically address traffic needs by reducing duplicate and inefficient routes to coordinate with routes under the *classified* list.

1. Reclassify Stroker Rd. between Hanna Nash and Crosby Eastgate as a collector
2. Reclassify, realign, and extend Foley Rd. to S. Ramsey Rd. as a collector
3. Reclassify Golf Club Dr. between Foley Rd. and S. Diamondhead Blvd. as a collector
4. Reclassify, realign, and extend Via Dora Dr. South to future Street as a collector
5. Reclassify Garrett St. as a collector
6. Realign and extend Saddle Creek Farms east to connect to Louis Rd. as a major thoroughfare.
7. Reclassify and realign Louis Rd. to intersect with Liberty County ETJ line as a major thoroughfare.
8. Reclassify and realign Crosby Eastgate Rd. north of the Houston ETJ line as a major thoroughfare
9. Reclassify, realign, and extend Adlong Johnson Rd. between the Houston ETJ line and Crosby Eastgate as a major thoroughfare.
10. Realign Miller Wilson Rd. between Hare Cook Rd. and Hare Rd.

Study Area Boundary at Baytown ETJ/Liberty County

Right of Way Widths and Classification transitions

- Crosby Lynchburg Rd. – Major Thoroughfare (100' ROW) within study area transitions to a Major Arterial within Baytown ETJ (140' ROW).
- Sralla Rd. - Major Collector (80' ROW) within study area transitions to a Baytown Minor Arterial (116')
- New Street "A" – Major Collector (80' ROW) within study area transitions to a Baytown Collector (72-96' ROW).
- New Street "B" – Major Thoroughfare (100' ROW) outside the study area at S. Diamondhead and into the study area to FM 2100.
- New Street "B" – Major Collector (80' ROW) within study area between FM 2100 and FM 1942 (partially in Baytown ETJ).
- Parish Rd. – Major Thoroughfare (100' ROW) within the study area between Krenek and FM 1942.
- Parish Rd. – Major Collector (80' ROW) within the study area north from Krenek and connect to existing Adlong School Rd.
- Seaberg Rd. – Major Collector (80' ROW) within study area continues into Baytown ETJ up to FM 1942.
- FM 1942 – Major Thoroughfare (100' ROW) within study area continues into Baytown ETJ up to Chambers County line.
- New Street "C" – Major Thoroughfare (100' ROW) within study area continues into Liberty County FM 1413.

Recommendations Outside the Study Area

Recommendations are needed outside of the study area for the adjacent jurisdictions of Houston, Baytown, Liberty County, and the San Jacinto River Authority. These recommendations will serve as a guide for jurisdictions to coordinate among stakeholders and align with the proposed thoroughfares.

Recommendations for the City of Houston include removing Major Thoroughfares found on page 18 under the subsection *deleting*. These thoroughfare routes will be rerouted to merge with roads within our study area or are not located in the appropriate location for its surrounding land use. We recommend the City of Houston to coordinate with Harris County regarding any amendments to the current Major Thoroughfare Plan and any necessary future coordination regarding this thoroughfare study.

Recommendations for Liberty County include the coordination with Harris County and the Grand Parkway Association to address future intersection spacing. A two mile intersection spacing is desired along SH 99 between Liberty County road alignments. Liberty County Roads should coordinate with the Harris County Non-ETJ area intersection spacing to improve traffic flow from east Harris County to future SH 99 Grand Parkway intersections. Liberty County should coordinate with Harris County on any thoroughfare transitions that occur at the boundary of the study area and the extension of thoroughfares as they are recommended in this plan. These designations include extensions of current streets into the Liberty County boundary as well as any changes in a hierarchy classification between the two jurisdictions as seen on page 19 under the subtitle *Study Area Boundary at Baytown ETJ/Liberty County*.

Recommendations for Baytown include the coordination with Harris County regarding any transitions in thoroughfare designations that occur between the Baytown ETJ and the study boundary. These designations include extensions of current streets into the Baytown ETJ boundary as well as any changes in a hierarchy classification between the two jurisdictions as seen on page 19 under the subtitle *Study Area Boundary at Baytown ETJ/Liberty County*.

Recommendations to the San Jacinto River Authority include coordination with Harris County and neighboring jurisdictions for the extension of Thompson Rd. through the Highland Reservoir. In addition, coordination regarding the transition of Thompson Rd. from a major collector within the study area to a City of Baytown minor arterial is recommended. Designations and extensions of current streets into the Baytown ETJ boundary as well as any changes in a hierarchy classification between the two jurisdictions can be reviewed on page 19 under the subtitle *Study Area Boundary at Baytown ETJ/Liberty County*.